LISTING OF CLAIMS

This listing of claims replaces all prior versions and listings of claims in the application.

1. (Previously Presented) Apparatus for converting the motion of sea waves into a source of useful power output, the apparatus comprising:

a structure having a drive shaft mounted thereon;

a float device connected to said structure and in operative connection with the drive shaft so that vertical motion of the float device drives the drive shaft; and

a rotatable device in operative connection with the drive shaft so that rotation of the drive shaft rotates the rotatable device;

in which the float device has a natural frequency of vertical oscillation which is substantially resonant with the frequency of a sea wave.

2. (Previously Presented) Apparatus according to claim 1 in which the mass of the float device is adjustable so as to tune the natural frequency of vertical oscillation of the float device to be substantially resonant with the frequency of a sea wave.

3. (Original) Apparatus according to claim 2 in which the float device comprises an interior chamber and means for admitting water into the chamber and/or expelling water from the chamber.

4. (Previously Presented) Apparatus according to claim 1 further comprising a counterweight in operative connection with the float device.

5. (Previously Presented) Apparatus according to claim 1 in which the rotatable device comprises electricity generating means.

6. (Original) Apparatus according to claim 5 further comprising a flywheel in operative connection with the drive shaft so that motion of the float device rotates the flywheel.

7. (Previously Presented) Apparatus according to claim 1 further comprising clutch means, said clutch means being disposed with respect to the rotatable device so that the rotatable device is rotated by the drive shaft only when the drive shaft is rotating in a predetermined direction.

8. (Canceled).

9. (Previously Presented) Apparatus according to claim 1 further comprising at least one gearing system for controlling the transmission of rotational motion to or from the rotatable device.

10. (Previously Presented) Apparatus according to claim 1 in which the float device is connected to said structure via a device disposed below the level of the float device so that the float device drives the drive shaft during the rising portion of a wave.

11. (Previously Presented) Apparatus according to claim 1 in which the float device has a natural frequency which is substantially resonant with the frequency of a sea wave of wave height in the range 0.5 to 10 m, preferably in the range 1.0 to 4.0 m, most preferably about 2.0 m.

12. (Previously Presented) Apparatus according to claim 1 in which the float device has a natural frequency in the range 0.05 to 0.33 Hz.

13. (Previously Presented) Apparatus according to claim 1 adapted so that, when the natural frequency of vertical oscillation of the float device is substantially resonant with the frequency of a sea wave, the amplitude of oscillation of the float device exceeds the amplitude of oscillation of the sea wave, preferably exceeding the amplitude of oscillation of the sea wave by a factor of two or more.

14. (Previously Presented) Apparatus according to claim 1 comprising a substantially rigid connecting rod coupled to the float device and permitting the float device to be suspended from said structure.

15. (Original) Apparatus according to claim 14 further comprising a crank arm, in which the connecting rod is in operative connection with the drive shaft via the crank arm.

16. (Original) Apparatus according to claim 15 further comprising a counterbalance arm.

17. (Original) Apparatus according to claim 16 further comprising a pivot, in which:

the crank arm and the counterbalance arm are in connection with the pivot so that movement of the connecting rod causes rotational motion of the counterbalance arm about the pivot; and

the counterbalance arm is in operative connection with the drive shaft so that rotational motion of the counterbalance arm about the pivot rotates the rotatable device.

18. (Original) A method of converting the motion of sea waves into a source of useful power output comprising the steps of:

disposing a float device on a body of water so that the float device floats thereon;

allowing the motion of sea waves across the body of water to vertically displace the float device; and,

transmitting power associated with vertical displacement of the float device to a rotatable device so that the vertical displacement of the float device caused by the motion of the sea waves rotates the rotatable device;

in which the natural frequency of vertical oscillation of the float device is substantially resonant with the frequency of the sea waves.

19. (Original) A method according to claim 18 in which the wave height of the sea waves is in the range 0.5 to 10 m, preferably in the range 1.0 to 4.0 m, most preferably about 2.0 m.

20. (Previously Presented) A method according to claim 18 in which the natural frequency of vertical oscillation of the float device is in the range of 0.05 to 0.33 Hz.

21. (Previously Presented) A method according to claim 18 in which the amplitude of oscillation of the float device exceeds the wave height of the amplitude of oscillation.

22. (Previously Presented) A method according to claim 21 wherein the amplitude of oscillation of the float device exceeds the amplitude of oscillation of the sea wave by a factor of at least two.

23. (Previously Presented) A method according to claim 18 further comprising the step of generating electricity from the rotation of the rotatable device.

24. (Previously Presented) A method according to claim 18 comprising the further sep of adjusting the mass of the float device so as to tune the natural frequency of vertical oscillation of the float device to be substantially resonant with the frequency of the sea waves.

25. (Previously Presented) A method according to claim 18 wherein a counterweight is operatively connected to the float device, and the natural frequency of the float device is the natural frequency of the float device in connection with the counterweight.

26. (Previously Presented) A method according to claim 18 in which power is transmitted to the rotatable device through clutch means so that the rotatable device is rotated by the drive shaft only when the float device is vertically displaced in a predetermined direction.

27. (New) Apparatus according to claim 1 further comprising a plurality of tethers coupled to the float device to restrict side to side motion of the float device.

28. (New) A method according to claim 18 further comprising tethering the float device to restrict side to side motion of the float device.